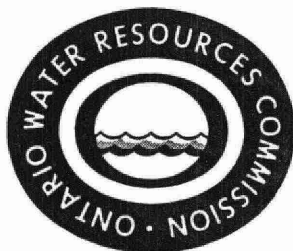


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DEICING SALT AND SNOW DISPOSAL

Water Quality Surveys Branch
Ontario Water Resources Commission
November 3, 1971

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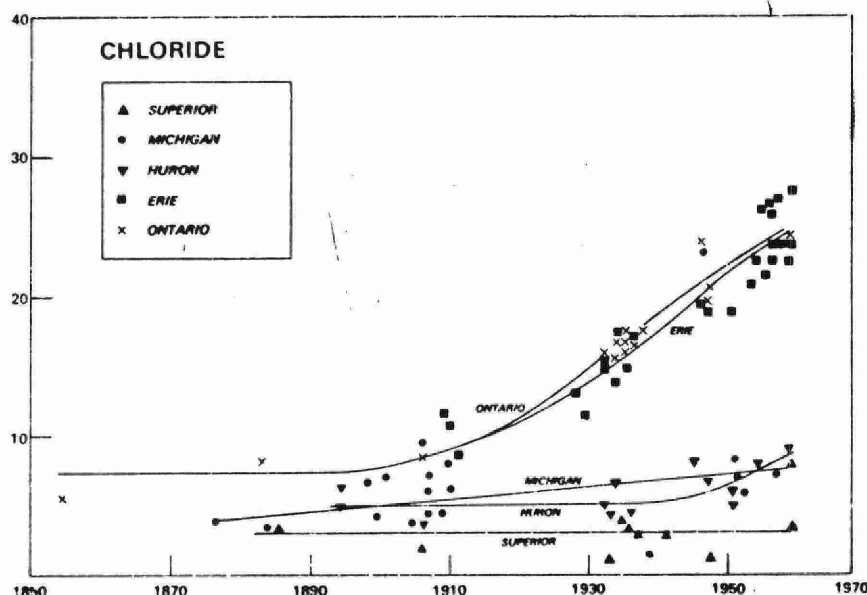
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DEICING SALT AND SNOW DISPOSAL

In the past few years there has been a growing awareness of the possible contamination of our lakes and rivers from deicing salt and snow dumping. Chloride levels in the Lower Great Lakes have shown a three-fold increase since the turn of the century as illustrated in the following figure¹. Industrial and, to a similar extent, municipal waste inputs have been largely responsible for this rise; however, the increasing use of salt as a deicing agent has raised much speculation as to the effect of chlorides from this source on water quality.



Changes in Chloride Levels in the Great Lakes (IJC - 1969)

1 Pollution of Lake Erie, Lake Ontario and the International Section of the St. Lawrence River; International Joint Commission, 1969.

In the spring of 1971 the OWRC conducted a study of the effects of chlorides from deicing salt on watercourses adjacent to major urban areas and ultimately Lake Ontario. The findings of this study showed that about twenty percent of the total chloride input to Lake Ontario was attributable to deicing salt. Locally, road salt resulted in winter increases of chlorides up to 300 percent in river basins draining the Metropolitan Toronto area.

The Commission recognizes the use of deicing salt as an essential operation in Ontario but every practical effort should be made to eliminate unnecessary use and losses.

In this regard the Ontario Department of Transportation and Communications has, over the past few years, enclosed many of its sand and salt stockpiles to eliminate the loss of salt through leaching. Also some authorities responsible for street and highway maintenance have limited the total amount of salt applied by reducing application rates; by applying of salt selectively on main thoroughfares, intersections and inclines, and using sand only on residential streets. The OWRC encourages such action and urges municipalities to put these programs into effect wherever possible.

The practice of snow disposal on frozen lakes and rivers is common in many municipalities. This is considered a convenient and economic means of snow disposal because during spring, the accumulated piles of snow quickly disappear. Snow dumped on land occupies valuable property well into the spring and on occasion early summer months.

Recent analysis of a snow disposal site indicates that snow scraped from roads may contain high concentrations of suspended solids, organic material, phosphorus, chlorides and lead introduced through automobile exhaust. Visible pollutants such as oil, trash, soil and soot are readily evident.

Following the spring thaw, materials contained in the snow are introduced directly to the watercourse and may cause seriously degraded water quality conditions. In the larger lakes or rivers it can be argued that the degradation of water quality in the immediate area is not significant. Pollutants contained in snow dumps are contributing to the long-term degradation of water quality. The Commission urges, therefore, that direct disposal of snow on lakes or rivers be eliminated wherever possible and suitable land disposal sites with facilities for trapping the suspended solid, oil and debris be provided.

In summary, with controls such as covered sand-salt stock piles, limiting the use of deicing salt and restricting snow dumping to land sites wherever possible, significant sources of pollution can be substantially reduced. These measures will complement other programs designed to control wastewater discharges and will lead to improvements in water quality.



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